Update on ESA Pesticide Consultations

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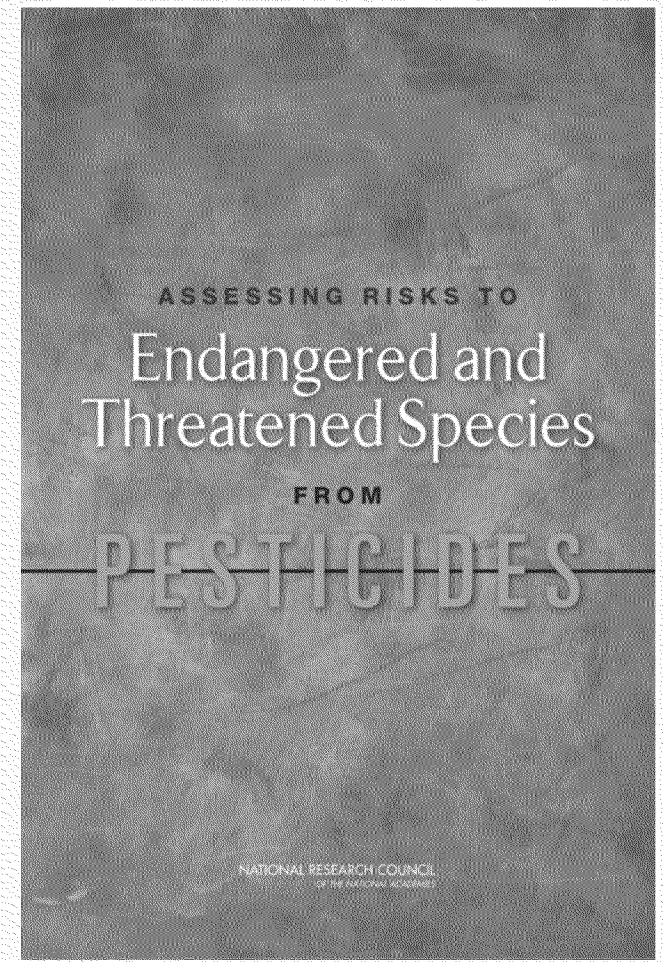
Today's Topics

- ESA Background
- Consultations between EPA and the Services
- ESA Priorities and Challenges

Background - NAS Report Implementation



- Released on April 30, 2013
- Developed in response to a joint request by EPA, NMFS, FWS, and USDA to address scientific areas of disagreement
- Recommended 3-step process that integrates ecological risk assessment methods with ESA Section 7 consultations
- Goal: unified interagency approach with agreement on process across all steps
- Multiple interagency workshops and stakeholder meetings
- Revise interim methods based on lessons learned and application of scientific approaches
- Once vetted, day-forward approach and iterative

Background

- The **Biological Evaluation** (BE) determines whether registered pesticides adversely affect one or more individuals of a listed species and/or their designated critical habitats
  - **Step 1** ["No Effect/May Affect" Determination]
  - **Step 2** ["Not Likely to Adversely Affect (NLAA)/Likely to Adversely Affect (LAA) Determination]

- The **Biological Opinion** (BiOp) determines whether the registration of a pesticide is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its designated critical habitat
  - **Step 3** ["Jeopardy/No Jeopardy" Determination and "Adverse Modification/No Adverse Modification" Determination]

Background: ESA Litigation Schedule

- First three pilot chemicals (organophosphate insecticides):
  - Chlorpyrifos
  - Diazinon
  - Malathion

  Court-ordered date: Final BO = Dec. 2017
- Next 2 (carbamate insecticides)
  - Methomyl
  - Carbaryl

  Court-ordered date: Final BO = Dec. 2018
- Next 4 (Herbicides)
  - Triazines (atrazine, simazine, propazine)
  - Glyphosate

  Court-ordered date: Final BE = Jun. 2020
  Court-ordered date: Final BO = Dec. 2022

- Conducted as part of EPA's Registration Review Process

Background: ESA Timeline

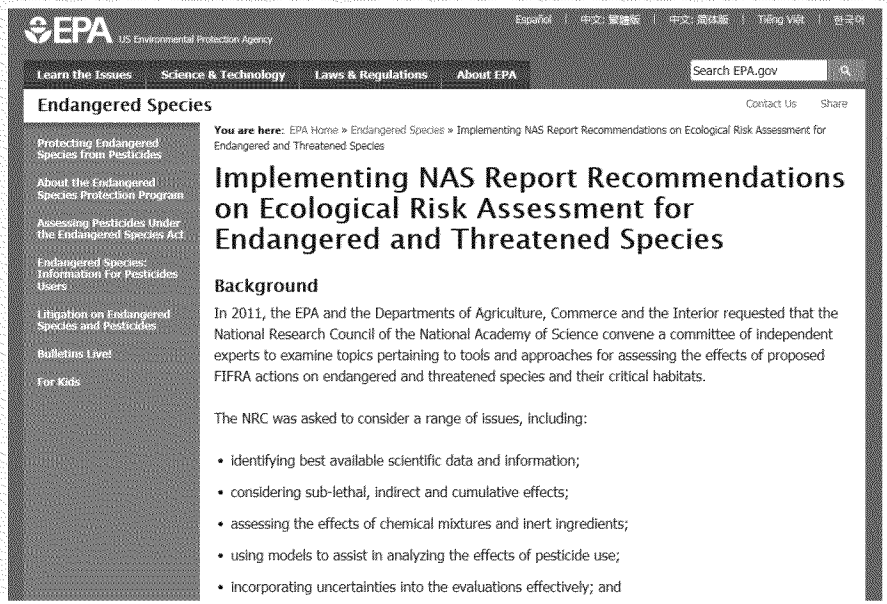
- **April 2013** – NAS report issued
- **November 2013** – release of interim scientific methods for implementing NAS recommendations
- **April 2016** - First draft BEs posted for public comment (chlorpyrifos, malathion, and diazinon)
- **June 2016** – 2-day stakeholder workshop
- **September 2016 to present** – Interagency workshops on BO process
- **September 2016** – Stakeholder meeting on mosquitocides uses
- **January 2017** – Final BEs for chlorpyrifos, malathion, and diazinon
- **April 2017** – Industry letter received requesting current pesticide consultations be put on hold
- **June 2017 (expected)** – Draft BOs for chlorpyrifos, malathion, and diazinon
- **On Hold** - Draft BEs for methomyl and carbaryl

Consultations: EPA website for BEs

The final BEs (and supporting documents including response to comments) for chlorpyrifos, diazinon, and malathion can be found at:

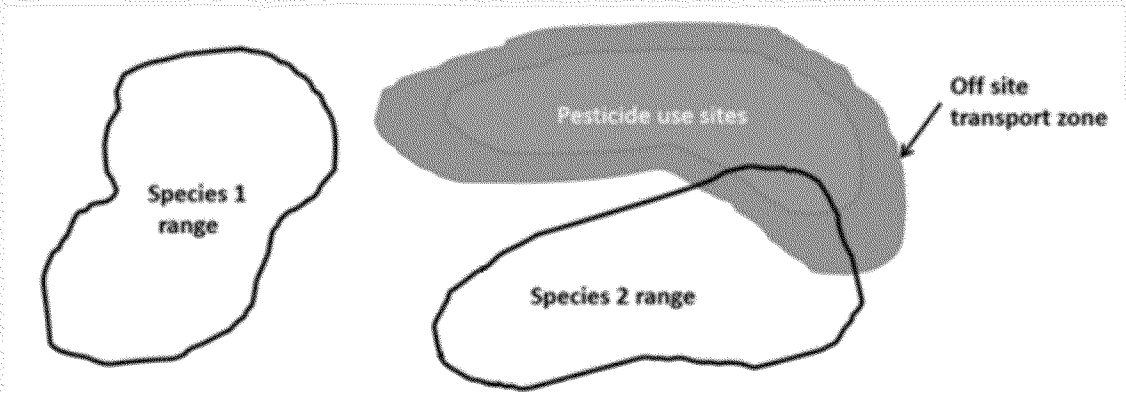
https://www.epa.gov/endangered-species/implementing-nas-report-recommendations-ecological-risk-assessment-endangered-and

Also includes links to chemical-specific dockets



Consultations: BE Interim Methods

- Step 1
  - Overlap of action area with species range and/or critical habitat
  - Is there potential for direct and/or indirect effects from the action?
  - No Effect / May Affect determination
    - No Effect – no consultation necessary
    - May Affect – move to Step 2

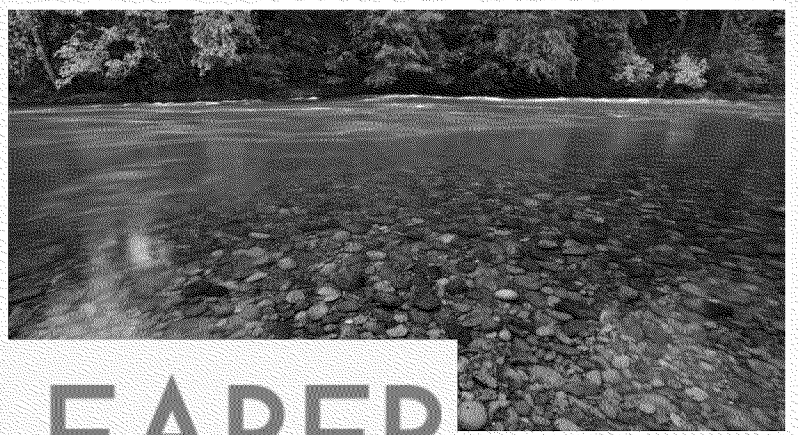


Consultations: BE Interim Methods

- Step 2
  - Weight-of-Evidence Approach
    - Lines of evidence
    - Estimating exposures (in aquatic and terrestrial habitats)
    - Effects thresholds (direct and indirect effects)
    - Incident data
    - Qualitative discussion of mixtures and abiotic influence on toxicity
  - Is an individual's fitness reduced or are species' essential habitat features affected?
  - LAA / NLAA determination
    - LAA – move to Step 3 (jeopardy determination)
    - NLAA – concurrence from Services

Consultations: BE Revisions

- Revisions made in the process (from the draft BEs released in April 2016 and the final BEs released in January 2017):
  - Modeling of aquatic Bins 3 and 4
  - Error corrections and improved transparency
  - Added/deleted species
  - Aquatic species ranges



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Consultations Final BE Conclusions

- LAA for most listed species
  - Chlorpyrifos and malathion – 97% LAA
  - Diazinon - ~80% LAA
  - Due to overlap of range/critical habitat and potential uses sites
  - Low thresholds (high toxicity), maximum use rates, other assumptions of exposure
  - Weight-of-evidence approach
  - LAA for single individual of a listed species

Consultations: Future BEs

- For future BEs, we are exploring ways to:
  - Reduce the size and complexity of the BEs
  - Move toward more probabilistic approaches
  - Refine both species ranges and potential use sites
  - Utilize watershed-level aquatic exposure models
  - Evaluate and improve the accuracy of exposure estimates in riverine and estuarine/marine habitats
  - Improve characterization and consideration of magnitude of effects
  - Consider the timing of potential exposures (*e.g.*, linkage with life-history variables) and potential durations of exposure

Stakeholder Meeting

- Presentation by Dr. Karl Malamud-Roam on 9/8/2016
- Overview of adulticides
  - Terminology
  - Application methods and factors that affect efficacy and spray drift
  - Modeling adulticide applications and deposition
  - Upcoming research (droplet size of mixtures, cumulative deposition from multiple passes, ground vs aerial deposition)
- Brief discussion about areas of support for EPA
  - Where are adulticide applications occurring
  - What are typical airplane setups for use in modeling
  - What are mitigation measures that make sense from an applicator standpoint

Priorities and Challenges

- Meet litigation deadlines for 9 chemicals:
  - Final BiOps for first 5 chemicals in Dec 2017 and 2018
  - Next 4: 3 triazines and glyphosate (2020-2022)
- Streamline Steps 1 and 2 interim methods
- Determinations required for 1850 species and ~800 designated critical habitats (~2650/chemical)
- Different statutes: FIFRA vs. ESA
- Implementation of nation-wide assessments at local scale as part of Registration Review
- ESA litigation for new chemicals

Priorities and Challenges (cont.)

- On April 13, 2017, registrants for chlorpyrifos, diazinon, and malathion sent letters to the political leadership of EPA and the Services
- The letter requested the following
  - EPA to withdraw the BEs
  - Services stop work the BiOps
  - Services modify the settlement agreements to allow more time to complete consultation
- EPA is considering the request

Questions?